

REMARKS/ARGUMENTS

Claim 25 has been amended to include the substance of claim 22 therein. Claim 22 has been canceled. Claim 43 has been amended to include the substance of claims 38, 41 and 42 therein and claims 38, 41 and 42 have been canceled. The dependency of claim 23 has been changed to claim 25 and the dependency of claims 39, 40, 44, 46 and 46 has been changed to claim 43.

Reconsideration of the application in view of the foregoing amendments and the following remarks is respectfully requested.

Claim 1 stands rejected under 35 U.S.C. §103(b) as being anticipated by Cross et al. (U.S. Patent No. 4,745,538). Applicants respectfully traverse this rejection.

Claim 1 is directed to a DC/DC converter which inter alia includes a flyback converter for providing gate drive voltages to the gate driven switching devices of a switched mode power supply.

Cross et al. is directed to the control of a forward converter and a flyback converter with a single control scheme. There is no disclosure or suggestion in Cross et al. of using the flyback converter disclosed therein to provide gate drive voltages in gate driven switching devices in a switched mode power supply. Indeed, there is no disclosure or suggestion at all in Cross et al. of any gate driven switching devices, let alone disclosure of using a flyback converter to provide gate drive voltage for such devices.

In view of the foregoing, it is respectfully submitted that not only is claim 1 not anticipated by Cross et al. but it is not rendered obvious thereby.

Claims 1-4 stand rejected under 35 U.S.C. §102(b) as being anticipated by Pilukaitis et al. (U.S. Patent No. 4,903,182). Applicants respectfully traverse this rejection.

As discussed above, Applicants' claim 1 is directed to the use of a flyback converter for providing gate drive voltages to gate driven switching devices of a switched mode power supply.

Pilukaitis et al., on the other hand, is directed to a self-oscillating flyback converter. Nowhere does Pilukaitis et al. either disclose or suggest the use of such a flyback converter for the purpose of generating gate drive voltages for gate driven devices of a switched mode power supply.

In view of the foregoing it is respectfully submitted that claim 1 is clearly not anticipated by Pilukaitis et al.

Further, Pilukaitis et al. does not suggest the use of a flyback converter for providing gate drive voltages for gate driven device of a switched mode power supply. Accordingly, it is respectfully submitted that Pilukaitis et al. does not render claim 1 obvious.

Claims 2-4 are dependent from claim 1 and are therefore patentable over Pilukaitis et al. for the same reasons, as well as because the combination of the specific features set forth in these claims with the features set forth in claim 1.

Claims 5-20 are rejected under 35 U.S.C. §102(b) as being anticipated by Brewer et al. (U.S. Patent No. 4,860,185). Applicants respectfully traverse this rejection.

Claims 5-20 are dependent either directly or indirectly from claim 1. As noted above, claims 1 is directed to the use of a flyback converter for providing gate drive voltages to gate driven switching devices of a switched mode power supply. There is no disclosure or suggestion in Brewer et al. of such use. Instead, in Brewer et al. the DC voltages outputted from a DC/DC converter are inputted to a DC/AC inverter module or outputted as DC output voltages. In neither case, is the output of the DC/DC converter used to provide gate drive voltages, to gate driven switches let alone gate drive voltages to gate driven switches in a switched mode power supply.

In view of the foregoing it is respectfully submitted that claims 5-20 are clearly patentable over Brewer et al. for the same reasons advanced above in connection with claim 1, as well as because of combination of the features set forth in claims 5-20 with the features set forth in the claim(s) from which they depend.

Claims 1 and 22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Majid et al. (U.S. Patent No. 6,087,782). Applicants respectfully traverse this rejection.

As noted above, claim 1 is directed to the use of a flyback converter for providing gate drive voltages to gate driven switching elements of a switched mode power supply. There is no disclosure or suggestion that the resonant mode power supply disclosed in Majid et al. provides gate drive voltages to gate driven switching elements of a switched mode power supply.

Since claim 22 has been canceled with the subject matter thereof now incorporated in claim 25, this rejection will be treated as applied to claim 25. There is no

disclosure or suggestion in Majid et al. of first second and third switching devices arranged such that the first switching device provides a primary voltage to the primary of a transformer, the second switching device is arranged to turn the first switching device ON and OFF and the third switching device is arranged to turn the second switching device ON and OFF, as set forth in claim 25. As is clear from Fig. 2 of Majid et al., not only are the switching devices Tr1, Tr2 and Tr4 not arranged in this manner but there is no suggestion that they be so arranged. In view of the foregoing it is respectfully submitted that claim 25 is clearly patentable over Majid et al.

Claim 22 stands rejected under 35 U.S.C. §102(b) as being anticipated by Schwartz (U.S. Patent No. 5,552,655). Since claim 22 has been canceled with the subject matter thereof now incorporated in claim 25, this rejection will be treated as applied to claim 25. Applicants respectfully traverse this rejection.

Claim 25 claims inter alia first second and third switching devices arranged such that the first switching device provides a primary voltage to the primary of a transformer, the second switching device is arranged to turn the first switching device ON and OFF and the third switching device is arranged to turn the second switching device ON and OFF. As should be clear from Fig. 3, the switching devices in Schwartz are not arranged in such a fashion. Nor is there any suggestion that they be so arranged. In view of the foregoing it is respectfully submitted that claim 25 is clearly patentable over Schwartz.

Claims 1-36 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yan (U.S. Patent No. 5,657,220). Applicants respectfully traverse this rejection.

Yan discloses a power inverter used to generate trapezoidal power waveforms with controllable shapes. Essentially, Yan is a type of DC/AC inverter. There is no disclosure or suggestion in Yan of the use of a flyback converter to generate gate drive signals for a gate driven switching device forming part of a switched mode power supply, as set forth in claim 1, nor is there any disclosure or suggestion in Yan of a flyback converter having first, second and third switching devices arranged as set forth in claim 25. It is respectfully submitted, therefore that claims 1 and 25 are clearly patentable over Yan.

Claims 2-21 are dependent either directly or indirectly from claim 1 and claims 23-36 are dependent either directly or indirectly from claim 25. It is respectfully submitted that these dependent claims are patentable for the same reasons as claims 1 and

25, as well as because of the combination and the features set forth in these claims with the features set forth in claim(s) from which they depend.

Claim 38 stands rejected under 35 U.S.C. §102(b) as being anticipated by Clarkin et al., (U.S. Patent No. 4,745,538) and Nguyen (U.S. Patent No. 6,249,111). Applicants respectfully traverse this rejection.

First, Applicants do not understand the rejection based upon Clarkin et al., Patent No. 4,745,538, The inventor of this patent is not Clarkin et al. but Cross et al.

Further, U.S. Patent No. 4,745,538 only has three figures and yet the Examiner refers to Figs. 8-9. The examiner also refers to col. 8 but Patent No. 4,745,538 only has seven columns.

With respect to Nguyen, claim 38 has been canceled with the subject matter incorporated into claim 43 which is directed to a multi-phase buck regulator DC/DC converter which comprises an auxiliary regulator to provide gate drive voltages to the power section and in which the auxiliary register can either increase or decrease the input voltage to provide such gate drive voltages.

There is no disclosure or suggestion in Nguyen of such an arrangement. Instead, Nguyen is directed to a technique for lowering losses in gate driven switching devices by paralleling a small device with a large device for each required switch. Although Nguyen discloses a dual drive buck regulator, there is no disclosure or suggestion in Nguyen of the combination of a buck regulator and auxiliary generator in which the auxiliary generator provides gate drive voltages to the power switch stages and does so by either increasing or decreasing an input voltage. In view of the foregoing it is respectfully submitted that claim 43 is clearly patentable over Nguyen et al.

Claims 38-63 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Umminger et al. (U.S. Patent No. 6,476,589) in combination with Redl, (U.S. Patent No. 5,734,562). As noted above, claim 38 has been canceled with the subject matter incorporated into claim 43. Accordingly, this rejection will be treated as being applicable to claim 43 and the claims dependent therefrom, i.e., claims 39, 40 and 44-63.

Umminger et al. is directed to methods for synchronizing non constant frequency switching regulators with a phase lock loop and Redl is directed to a power factor correction circuit. Neither Umminger nor Redl describe a multi-phase buck regulator that employs gate driven switching devices combined with an auxiliary regulator and

Umminger et al. is directed to methods for synchronizing non constant frequency switching regulators with a phase lock loop and Redl is directed to a power factor correction circuit. Neither Umminger nor Redl describe a multi-phase buck regulator that employs gate driven switching devices combined with an auxiliary regulator and particularly an auxiliary regulator in which a flyback converter generates a voltage source that produce the waveforms that drive the gate driven switching devices.

In view of the foregoing it is respectfully submitted that claims 43, 39, 40 and 44-63 are patentable over the combination of Umminger and Redl.

In view of the foregoing this application is now believed to be in condition for allowance which action is respectfully requested.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 14, 2004:

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